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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PHILLIP M. MORGAN and WILLIAM J. VANDERHEYDEN

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Appeal 2007-4537  
Application 10/670,919  
Technology Center 3600

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Decided: May 8, 2008

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Before JENNIFER D. BAHR, ANTON W. FETTING, and DAVID B.  
WALKER, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Phillip M. Morgan and William J. Vanderheyden (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 2, 4-6, 12, 13, and 15-22, which are all of the claims pending in the application.

Claims 3, 7-11, and 14 have been canceled. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

*The Invention*

Appellants' claimed invention is directed to magnetic tape cartridges and drives, and particularly to a media access door for tape cartridges. Specification 1:6-16. Claims 1, 4, and 6 are representative of the claimed invention and read as follows:

1. A magnetic tape cartridge, comprising:
  - a door on a first face of the cartridge;
  - a slider on a second face of the cartridge;
  - a belt within the cartridge that connects the door and the slider;
  - wherein when the slider is moved, the door opens; and
  - wherein the door opens by sliding parallel to the first face.
4. The cartridge of claim 1, further comprising a belt post that bends the belt at an angle.
6. The cartridge of claim 1, further comprising a compression spring, wherein the compression spring provides force to close the door.

*The Rejection*

Appellants seek review of the Examiner's rejection of claims 1, 2, 4-6, 12, 13, and 15-22 under 35 U.S.C. § 103(a) as unpatentable over Nayak (US 5,868,333, issued February 9, 1999) in view of Ishihara (US 6,435,439 B1).

We refer in this opinion to the Examiner's Answer, mailed May 3, 2006, and Appellants' Appeal Brief, filed March 21, 2006, for the positions of the Examiner and Appellants with respect to this rejection.

### THE ISSUES

The first issue presented to us in this appeal is whether it would have been obvious to replace the pivoting aperture door arrangement of Nayak's cartridge with a sliding aperture door arrangement, as taught by Ishihara. Appellants argue such modification of Nayak would not have been obvious because (1) no teaching, suggestion, or motivation exists to combine the references (Appeal Br. 11-13); (2) the proposed combination changes the principle of operation of Nayak (Appeal Br. 10); (3) Nayak and Ishihara address different problems and each presents a complete solution to the problem that each solves (Appeal Br. 14-16); and (4) the age of the references, combined with the value of the claimed invention and the absence of prior disclosure, show that the subject matter of claim 1 would not have been obvious (Appeal Br. 17-18).

Another issue presented is whether, even if combined as proposed by the Examiner, Nayak and Ishihara teach all features of claim 4. In particular, Appellants argue that Nayak does not show or suggest a post, as required in claim 4 (Appeal Br. 18-20).

A third issue is whether it would have been obvious to replace Nayak's torsion spring with a compression spring for closing the sliding aperture door, as taught by Ishihara, to arrive at the subject matter of claim 6. Appellants argue that Nayak does not teach a compression spring within the cartridge itself and would not benefit from such (Appeal Br. 21). In particular, Appellants reason that the compression spring of Ishihara would be of no use in closing Nayak's pivoting door. *Id.* Appellants further argue that even if both the compression spring and the sliding door of Ishihara were incorporated into Nayak's cartridge, the compression spring would be useless because Nayak's cable eliminates the need for the compression spring (Appeal Br. 21-22). Appellants also argue that Nayak's cable would interfere with the operation of a compression spring incorporated into Nayak's cartridge for closing the aperture door (Appeal Br. 23).

#### FINDINGS OF FACT

FF1 Nayak discloses a tape media cartridge 10 comprising an aperture door 54 pivotally mounted on a first face (front 18) of the cartridge, a slider (sliding tab 66) on a second face (left side 22) of the cartridge, a belt (cable 68) within the cartridge that connects door 54 and sliding tab 66 such that when the sliding tab 66 is moved in the direction of arrow 74, the door 54 is moved to an open position in the direction of arrow 58 (col. 3, l. 53; col. 4, ll. 1-5, 25-27, 50-58; col. 5, ll. 24-29; figs. 1, 2, and 3). Nayak provides

a torsion spring 72, in cooperation with a pivot pin 42, for biasing the door 54 to the closed position (col. 7, ll. 19-40).

- FF2 Nayak is concerned with minimizing the physical dimensions of the cartridge (col. 7, ll. 44-47). Nayak also recognizes that space within the read/write device 100 is limited and that, consequently, an arrangement wherein space must be reserved within the read/write device for the sweep of the door 54 from its closed position to its open position would be undesirable (col. 8, ll. 44-50). Nayak addresses this problem by designing the door opening mechanism such that the door 54 is articulated to its fully opened state prior to the cartridge being fully received within the tray 104 of the read-write device. *Id.*
- FF3 Space limitations are always of great concern to designers of electronic component packaging. This is exemplified by Appellants' admission that available clearance within the drive is a factor that drives design of threading mechanisms (Specification 1:26-28).
- FF4 Ishihara discloses a magnetic tape cartridge comprising a casing 7 formed by upper and lower casing halves 2 and 3, a reel 4 around which a magnetic tape 20 is wound (col. 8, l. 65 to col. 9, l. 1), a tape draw-out opening 26, and a sliding door 27 for opening and closing the tape draw-out opening 26 (col. 9, l. 36-39). The sliding door 27 is slidable back and forth in the direction of arrow A (fig. 1) parallel to the side wall of cartridge casing 7 (col. 9, ll. 40-43).

- FF5 Ishihara's sliding door 27 is urged toward the closing position by a spring member (col. 9, ll. 44-45). Ishihara describes an embodiment of the door closing spring comprising a coiled spring 10 pushed during assembly toward the sliding door 27 until it abuts the end face 27d of the sliding door 27, and compressed by a predetermined amount, so as to bias the sliding door 27 to the closing position (col. 12, ll. 39-46; fig. 8).
- FF6 In Nayak's illustrated embodiment, the cable 68 is routed along an arcuate cable guide 26, which curves around a portion of the tape media reel 40, "in close proximity to the reel and following the curvature of the reel for purposes of space efficiency" (col. 4, ll. 61-65; figs. 1 and 2). The arcuate cable guide spaces cable 68 from reel 40 and directs the cable 68 toward the sliding tab 66 (col. 5, ll. 2-3). Nayak describes alternative embodiments in which the functions of the cable guide 26 may be accomplished by "a pulley, pin structure, or the like" (col. 5, ll. 3-6).
- FF7 A "pin" is generally understood to be "a peg of wood, metal, etc., used for fastening or holding things together, as a support on which to hang things, etc." *Webster's New World Dictionary* 1080 (David B. Guralnik ed., 2<sup>nd</sup> Coll. Ed., Simon & Schuster, Inc. 1984). A "peg" is generally understood to be "a short, usually tapering or pointed piece used to hold parts together or in place, or to close an opening, as in a barrel" or "a projecting pin or bolt used to hang things on, fasten ropes to, ..., etc." *Id.* at 1048.

- FF8 A “post” is generally understood to be “a piece of wood, metal, etc., usually long and square or cylindrical, set upright to support a building, sign, fence, etc.” or “anything like this in shape or purpose.” *Id.* at 1112.
- FF9 Appellants do not define the term “post” or use it in any manner suggesting a meaning that differs from its ordinary and customary meaning. As illustrated in Figure 3A of the present application, belt post 316 appears to be a cylindrical peg.

#### PRINCIPLES OF LAW

Section 103 forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

*KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). “A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *Id.* at 1742.

#### ANALYSIS

##### *Claims 1, 2, 5, 12, 13, and 17*

Appellants argue against the rejection of claims 1, 2, 5, 12, 13, and 17 together as a group (Appeal Br. 9, 18). Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii) (2007), we select claim 1 as the representative



claim to decide the appeal of the rejection of these claims, with claims 2, 5, 12, 13, and 17 standing or falling with claim 1.

Nayak teaches all the limitations of claim 1, with the exception that Nayak teaches a door 54 that opens by pivoting (FF1), rather than a door that opens by sliding parallel to the first face as required in claim 1. The Examiner contends that it would have been obvious to provide Nayak with a sliding door as taught by Ishihara to reduce the space required to open the door (Answer 3).

Appellants' position that no teaching, suggestion, or motivation exists to combine Nayak and Ishihara as proposed by the Examiner is not well taken. First, we observe that while the requirement of demonstrating a teaching, suggestion, or motivation (the TSM test established by the Court of Customs and Patent Appeals) to combine known elements in order to show that the combination is obvious may be "a helpful insight," it cannot be used as a rigid and mandatory formula. *KSR*, 127 S.Ct. at 1741. While there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1741. Moreover, for the reasons that follow, we find that the combined teachings of Nayak and Ishihara would have prompted a person of ordinary skill in the art to make the modification proposed by the Examiner.

Nayak recognizes that space within the read/write device 100 is limited and is also concerned with minimizing the physical dimensions of the cartridge (FF2). This is consistent with the recognized significance of space limitations in the art of electronic component packaging, as exemplified by Appellants' admission that available clearance within the drive is a factor that drives design of threading mechanisms (FF3). Nayak, in particular, recognizes that the articulation of the pivoting door 54 occupies space within the read/write device (FF2). In light of such well known concerns about space limitations both within the cartridge itself and within the read/write device, a person of ordinary skill in the art would have immediately appreciated the space-saving advantages afforded by a sliding door that slides back and forth parallel to the side wall of the cartridge casing as taught by Ishihara (FF4). Modification of Nayak's cartridge by substituting a door sliding parallel to the face of the cartridge for the pivoting door of Nayak to achieve such space-saving advantages as proposed by the Examiner is nothing more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement. *See KSR*, 127 S.Ct. at 1740.

While Nayak presents one solution to the problem of trying to minimize cartridge dimensions while also addressing in part the recognized impact of door opening sweep on available space within the read/write device (FF2), a person of ordinary skill in the art would have appreciated that a sliding door as taught by Ishihara would eliminate entirely the door

opening sweep problem presented by a pivoting door without substantially increasing the physical dimensions of the cartridge. Such a person thus would have been prompted to make the substitution proposed by the Examiner. Therefore, Appellants' argument that Nayak and Ishihara address different problems and each presents a complete solution to the problem addressed is not persuasive.

We likewise are not persuaded by Appellants' argument that modification of Nayak's cartridge to substitute a sliding door for the pivoting door of Nayak would change the principle of operation of Nayak. While Nayak describes a cartridge with a pivoting door and, as pointed out by Appellants (Appeal Br. 10), does not address non-pivoting door mechanisms, Nayak does not identify the pivoting feature of the door as being critical to the operation of the disclosed device as a tape media cartridge. The presence of a door that is closed until the cartridge is inserted into the read/write device or drive to protect the tape media and opened upon insertion into the read/write device or drive to provide access to the leader of the tape media is certainly critical to the principle of operation of the cartridge. Whether that door opens by sliding or articulation, however, would not change the basic principles under which Nayak's device is designed to operate. Moreover, unlike the situation in *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) relied upon by Appellants (Appeal Br. 10), substitution of a sliding door for the pivoting door of Nayak would not require a substantial reconstruction and redesign of the elements shown in Nayak. Rather, the proposed substitution would appear to require only the

simple substitution of the door itself and substitution of the pivot pin and torsion spring of Nayak with a linear-acting spring, as also taught by Ishihara (FF5), for biasing the door to the closed position.<sup>1</sup> Such a substitution would appear to be a simple matter of ordinary common sense and creativity well within the technical grasp of a person of ordinary skill in the art.

Appellants' argument with respect to the age of the references is not persuasive that the invention of claim 1 would not have been obvious, because it is not accompanied by evidence of failed attempts to solve the problem of conserving available clearance within the drive cited by Appellants and by Nayak. It is well established that the mere age of the references is not persuasive of the unobviousness of the combination of their teachings, absent evidence that, notwithstanding knowledge of the references, the art tried and failed to solve the problem. *In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977); *In re Neal*, 481 F.2d 1346, 1347 (CCPA 1973); *In re McGuire*, 416 F.2d 1322, 1327 (CCPA 1969).

In light of the above, Appellants' arguments do not persuade us of error in the Examiner's rejection of claim 1 as unpatentable over Nayak in view of Ishihara. The rejection of claim 1, as well as claims 2, 5, 12, 13, and 17 standing or falling with claim 1, is sustained.

*Claims 4, 15, and 21*

Appellants argue the patentability of these claims together as a group (Appeal Br. 18, 20). Therefore, in accordance with 37 C.F.R.

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<sup>1</sup> This substitution is addressed *infra* in the discussion of claim 6.

§ 41.37(c)(1)(vii), we select claim 4 as the representative claim to decide the appeal of the rejection of these claims, with claims 15 and 21 standing or falling with claim 4.

Appellants' argument that Nayak does not show or suggest a post for guiding the belt (cable 68) is not persuasive. In light of our findings above (FF7, FF8, and FF9), we find the "pin structure" embodiment of Nayak's cable guide (FF6) to comprise a "post" as used in Appellants' claim 4. Even assuming Appellants are correct that any pin structure "suggested" by Nayak must have several pins to form the longer arc (Appeal Br. 18), the limitation in claim 4 of the cartridge "further *comprising* a belt post that bends the belt at an angle" (emphasis ours), which does not restrict the claim to a single belt post, does not distinguish over such an arrangement. The transitional term "comprising" is inclusive or open ended and does not exclude additional, unrecited elements. *See In re Baxter*, 656 F.2d 679, 686 (CCPA 1981).

Appellants fail to persuade us the Examiner erred in rejecting claim 4 as unpatentable over Nayak in view of Ishihara. The rejection of claim 4, and claims 15 and 21 standing or falling with claim 4, is sustained.

*Claims 6 and 16*

Appellants argue the patentability of claims 6 and 16 together (Appeal Br. 20, 23). Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we select claim 6 as the representative claim to decide the appeal of the rejection of claims 6 and 16, with claim 16 standing or falling with claim 6.

Appellants' argument that Nayak would not benefit from a compression spring for closing the door appears to be grounded on Appellants' position that it would not have been obvious to replace Nayak's pivoting door arrangement with a sliding door arrangement as taught by Ishihara. For the reasons discussed above with respect to the rejection of claim 1, Appellants' position is not well taken. Nayak teaches a torsion spring for biasing the pivoting door to the closed position (FF1), while Ishihara teaches a linear force-applying coiled compression spring for biasing the sliding door to the closed position (FF5). A person of ordinary skill in the art would have readily appreciated from the teachings of Ishihara that the coiled compression spring arrangement taught by Ishihara would be better suited for biasing a sliding door and would have been prompted to incorporate such a compression spring arrangement, in place of the torsion spring and pivot pin of Nayak, along with the sliding door as taught by Ishihara.

In arguing that Nayak's cable eliminates the need for the compression spring, Appellants seemingly misapprehend Nayak's device. Nayak's cable 68 is used to *open* the door 54, not to close it. A compression spring, in place of Nayak's torsion spring 72, would be useful to *close* the door.

Appellants' bald argument that Nayak's cable would interfere with the operation of a compression spring incorporated into Nayak's cartridge for closing the aperture door is not persuasive. Appellants provide no evidence or technical explanation to support this contention, and it is not apparent to us why this would be the case.

For the above reasons, Appellants fail to persuade us the Examiner erred in rejecting claim 6 as unpatentable over Nayak in view of Ishihara. The rejection of claim 6, and claim 16 standing for falling with claim 6, is sustained.

*Claims 18, 19, 20, and 22*

Appellants argue the patentability of claims 18, 19, and 22 together as a group (Appeal Br. 23-24). Thus, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we select claim 18 as the representative claim to decide the appeal of the rejection of these claims, with claims 19 and 22 standing or falling with claim 18. Appellants present no separate argument in favor of the patentability of claim 20. Thus, claim 20 also stands or falls with claim 18, from which it depends.

Appellants simply rely on the same arguments advanced with respect to claims 1 and 6 for the patentability of claim 18. For the reasons discussed above, these arguments are likewise not persuasive in demonstrating error in the Examiner's rejection of claim 18. The rejection of claim 18, and claims 19, 20, and 22 standing or falling with claim 18, as unpatentable over Nayak in view of Ishihara is sustained.

DECISION

The decision of the Examiner to reject claims 1, 2, 4-6, 12, 13, and 15-22 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

JRG

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